

IS ASIATIC BITTERSWEET VINE KILLING YOUR TREES?

Gerry Paul, Member, Lexington Tree Committee

We're all concerned about the health of our trees not only because of their ecological value but because they shade our properties, lower our heating and cooling costs, and increase the value of our homes.

One of the worst local threats to tree health and survival is the Asiatic Bittersweet vine (*Celastrus orbiculatus*) which literally strangles otherwise healthy trees to death!

This non-native vine was imported first to North America in the mid 1800s. It was valued for its colorful orange and red berries and was used to make wreaths and holiday decorations. Only later was its destructive potential realized.

Asiatic Bittersweet is an extremely invasive species which spreads rapidly, the seeds being dispersed mostly by birds but partly by humans as they collect and use the vines for decoration. It has tremendous climbing abilities to over 60 feet, and wraps itself around trees and bushes and eventually strangles or smothers them to death.

Before it was recognized as a destructive invasive species, Asiatic Bittersweet vine was planted along roadsides to help control soil erosion. From this start, and from bird-aided dispersal, it has now taken over landscapes, roadsides, and woods.

HOW BITTERSWEET KILLS TREES

Asiatic Bittersweet damages and kills trees in three ways:

-Strangulation - Asiatic Bittersweet can cripple and kill the plants it parasitically grows on by wrapping tightly around them. This is called "girdling." As the tree grows, the vines tighten and thicken gradually to cut a deep groove around the trunk, branch, or twig. Wrapping around the tree trunk, over time, the vine wears off the bark around the trunk and chokes off the transfer of nutrients through the phloem, a vital, thin inner bark layer. In some languages (German for instance) Asiatic Bittersweet is also called the "tree strangler."

-Blocking light - Asiatic Bittersweet eventually overtops the tree and prevents sunlight from reaching the leaves of the tree. Photosynthesis is prevented and the tree cannot grow.

-Pulling down the tree - Main feeder vines can grow to 4 inches in diameter and throw off dozens of tough shoots that reach up to the branches. As the tree grows taller, the branches remain firmly anchored by these shoots to the ground. At first the branches are bent down, then literally ripped off. If the vine climbs up on a young tree, the top of the tree is simply pulled down into a tighter and tighter arc until it breaks the trunk off. Finally, where these vines have girdled a trunk, the tree may break off in high winds.

Asiatic Bittersweet is totally indiscriminate in what it chooses to overrun, and can often be seen running along telephone poles, guy wires and telephone lines. When it grows unchecked in a forest, the entire woodland soon becomes a hopeless tangle of dead trees that appear to be alive only because the tops are so full of Bittersweet. It has earned the nickname "Kudzu of the North".

HOW TO RECOGNIZE ASIATIC BITTERSWEET

Asiatic Bittersweet is commonly found along fencerows and property lines, roadsides and power lines. If you haven't looked at the trees along the sides and back of your property in a while, it is probably worthwhile doing so to see if Asiatic Bittersweet is climbing on your trees there.

Asiatic Bittersweet is easily recognized in the fall is because of the orange/red berries that it produces. These berries will stand out after leaf drop from the tree that the Bittersweet is climbing. Bittersweet leaves are among the last to turn color, to a chartreuse-yellow. In November the vines are easy to spot because their leaves are present. Leaves of Asiatic Bittersweet are glossy, rounded with a pointed tip, finely toothed and arranged alternately along the stem.

Be Careful of Poison Ivy! Not all vines that climb trees are Asiatic Bittersweet. For example, Poison Ivy (*Toxicodendron radicans*) climbs up trees by attaching itself to the tree's bark by rootlets, not by wrapping itself around the tree. Look for its three leaflets together, whereas bittersweet's leaves occur singly. Older Poison Ivy vines tend to have a "hairy" look to them, while Bittersweet vines are "corky" but smooth looking. The native Virginia Creeper vine (*Parthenocissus quinquefolia*) sometimes climbs trees, but is recognizable by its 5-part leaf. Native Wild Grape and garden Ivy will also climb trees. These vines aren't particularly beneficial to trees, but are not as destructive as Bittersweet.

HOW TO CONTROL ASIATIC BITTERSWEET

If the vine is small, simply pull the roots out of the ground. The roots' distinctive orange color will confirm the identification. If the roots are too big to pull out, the vines should be cut as close to the ground as possible. Depending on the diameter of the vine, this can be done with garden snips, loppers, or for the largest, with a saw.

If the roots are not removed or poisoned, the vine will re-sprout and will in time grow up the tree again. You may wish to simply be persistent and cut down the re-sprouting Bittersweet vines every few months in order to deplete their root energy and kill them. The roots can also be killed with herbicide, but if you use this or any other poison, check out the website at <http://www.nps.gov/archive/plants/alien/fact/ceor1.htm>, read directions closely and use with care.

Another control method is to mechanically pull out large roots using the leverage of a WeedWrench, a tool sold at New England Wild Flower Society's "Garden in the Woods". There is no reason to attempt to pull the vines down from the tree. In fact, if you do so too forcefully, you may damage branches. In time the dead vines will lose their grip and will fall naturally.

Please feel free to pick all the bittersweet berries from the roadside that you can – it will keep them out of the seed bank for next year! However, they eventually must be disposed of carefully. Tie them up in black plastic garbage bags and send them out with the trash to be incinerated. If you toss them on your compost pile, next spring you will be very sorry you did.

As for purchasing bittersweet wreaths commercially, please consider not doing so. There are other beautiful wreath materials, and this plant destroys our forests. Bittersweet plants were already banned from sale or importation from January 1, 2006, as the plant is on the Massachusetts list of invasive species, but it is not yet clear if the berry sprays are prohibited under this ban. Unfortunately the berries are still offered for sale in Lexington.

OTHER SOURCES OF INFORMATION

Much helpful information can be found easily on the World Wide Web. Particularly useful sites are www.vinecutter.com, wikipedia, and www.stowconservationtrust.org/plants.htm. Material from each of these sites was used in the preparation of this article. A search for "bittersweet vine" will yield a number of other useful sites.

HELP FROM THE TREE COMMITTEE

If you are unsure if the vines in your trees or bushes are Asiatic Bittersweet, the Lexington Tree Committee is willing to help. Simply send an email to lexingtontree@yahoo.com and we will arrange to come teach you how to identify Bittersweet.

Gerry Paul is a member of the Lexington Tree Committee.